

Best Management Practices

MISSOURI DEPARTMENT OF CONSERVATION



Snuffbox

Epioblasma triquetra

Common name • Snuffbox

Scientific name • *Epioblasma triquetra*

Federal status • Candidate

State status • Endangered

Ecology

The snuffbox is a freshwater mussel species that is widespread but rare throughout the Midwest. In Missouri, it inhabits medium-sized and large rivers in the Meramec and St. Francis river basins. It prefers a gravel- and cobble-bottomed river with swift to moderate current. Snuffbox are typically found in clear water that is a few inches to 2 feet deep.

Mussels are filter feeders that pump water through their siphons to collect food particles from the water. They gather all their nutrients, and sometimes unwanted toxins in the water, through this process. Almost all mussel species depend on a fish host to complete their life cycle. Mature adult mussels release glochidia (the immature stage), which must attach to the gills or fins of fish to complete their development. After an average of 2-4 weeks, the newly metamorphosed juveniles drop from the fish; and if they land in suitable habitat, they will burrow into the substrate and grow to repeat the cycle. Fish are an important link in the reproductive cycle of mussels, and typically, only certain species of fish are suitable hosts. Known fish hosts for the snuffbox include the log perch, Ozark sculpin, black-spotted topminnow and black side darter. Like all bradytic (long-term brooding) mussel species, the snuffbox spawns in the fall, over winters its eggs and releases the mature glochidia in early summer.

Reasons for Decline

Historically, snuffbox populations extended throughout river systems in much of the Midwestern United States. Although little research has been done specifically on this species, the snuffbox is like most mussels in that its population has continued to decline over the last few decades. Alteration and degradation of habitat as a result of rural and urban development has very likely adversely impacted them. Such practices as dam construction, gravel mining, removal of trees and undergrowth along the stream bank, and non-point source pollution from

agriculture and urban areas have probably contributed to the decline. These practices have reduced available habitat, increased stagnation of bottom waters, increased siltation, and possibly eliminated or reduced fish hosts.

Specific Recommendations

Habitat availability is likely the limiting factor for the snuffbox. Protecting and restoring rivers and creeks would benefit many aquatic species, including mussels.

→ A survey of the waterways in the project area should be conducted by a trained biologist in order to identify occurring populations of this species.

→ Dams and other impoundment structures that alter water depth and turbidity and promote siltation should be avoided in rivers that contain habitat for the snuffbox.

→ No work should be allowed below the high bank of the stream between April 1 and August 30.

→ All equipment that enters the waterway should be washed and checked for juvenile zebra mussels before entering another body of water. This will help prevent the spread of this exotic European mussel species that can negatively affect native aquatic organisms and mussel species like the snuffbox.

General Recommendations

Refer to Management Recommendations for Construction Projects Affecting Missouri Streams and Rivers.

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